WHAT IS CLAIMED IS:

1. An elongated guidewire comprising:

a) an elongated core member having proximal and distal core sections, with the distal core section having a first tapered core segment and a distally contiguous second tapered core segment, each of said core segments tapering distally at angles of up to 25°; and

b) a flexible body disposed about and secured to the distal core section.

2. The elongated guidewire of claim 1 wherein the second tapered core segment has a greater degree of taper than the first tapered core segment.

3. The elongated guidewire of claim 1 wherein the second tapered core segment tapers at about 2° to about 15°.

4. The elongated guidewire of claim 1 wherein the second tapered core segment tapers at about 4° to about 12°.

5. The elongated guidewire of claim 1 wherein the first tapered core segment tapers at about 1° to about 12°.

6. The elongated guidewire of claim 1 wherein the first tapered core segment tapers at about 1° to about 10°.

7. The elongated guidewire of claim 1 wherein each of the first and second tapered core segments extend a length of about 1 to about 15 cm.

8. The elongated guidewire of claim 1 wherein the second tapered core segment is longer than the first tapered core segment.

9. The elongated guidewire of claim 1 wherein the first tapered core segment is about 1 to about 8 cm in length.

10. The elongated guidewire of claim 1 wherein the first tapered core segment is about 2 to about 6 cm in length.

11. The elongated guidewire of claim 1 wherein the second tapered core segment is about 1 to about 12 cm in length.

12. The elongated guidewire of claim 1 wherein the second tapered core segment is about 2 to about 10 cm in length.

13. The elongated guidewire of claim 1 wherein the flexible body is a helical coil with proximal and distal ends.

14. The elongated guidewire of claim 13 wherein the distal end of the helical coil is secured to the distal end of the core member.

15. The elongated guidewire of claim 13 wherein the helical coil has a proximal end secured to an intermediate location on the second tapered core segment.

16. The elongated guidewire of claim 13 wherein a shaping ribbon having proximal and distal extremities is secured by its proximal extremity to the distal end of the core member and by its distal extremity to the distal end of the helical coil.

17. The elongated guiding member of claim 2 wherein the helical coil is about 1.5 to about 40 cm in length.

18. The elongated guide member of claim 1 wherein the first and second tapered core segments have truncated conical shapes.

19. An elongated guidewire which comprises:

a) an elongated core member having a proximal core section, a distal core section with at least two contiguous tapered segments, a tapered proximal segment and a tapered distal segment having a taper which is up to 25° greater than

the taper of the tapered proximal segment and a flattened distal segment distal to the tapered distal segment; and

b) a helical coil having a distal end secured to a distal end of the flattened distal segment.

20. The guidewire of claim 19 wherein the helical coil has a proximal end secured to an intermediate location on the tapered distal segment.

21. The elongated guidewire of claim 19 wherein the tapered distal core segment tapers about 2° to about 15°.

22. The elongated guidewire of claim 19 wherein the tapered distal core segment tapers about 4° to about 12°.

23. The elongated guidewire of claim 19 wherein the tapered proximal core segment tapers about 1° to about 12°.

24. The elongated guidewire of claim 19 wherein the tapered proximal core segment tapers about 1° to about 10°.

25. An elongated guidewire which comprises:

a) an elongated core member having a proximal core section, a distal core section with at least two contiguous

tapered segments, a tapered proximal segment and a tapered distal segment having a length greater than the length of the tapered proximal segment and a flattened distal segment distal to the tapered distal segment; and

b) a helical coil having a distal end secured to a distal end of the flattened distal segment.

26. The elongated guidewire of claim 25 wherein the tapered proximal core segment is about 1 to about 8 cm in length.

27. The elongated guidewire of claim 25 wherein the tapered proximal core segment is about 2 to about 6 cm in length.

28. The elongated guidewire of claim 25 wherein the tapered distal core segment is about 1 to about 12 cm in length.

29. The elongated guidewire of claim 25 wherein the tapered distal core segment is about 2 to about 10 cm in length.

30. An elongated guidewire which comprises:

a) an elongated core member having a proximal core section, a distal core section with at least two contiguous tapered segments, a proximal segment having a first taper and a

distal segment having a second taper different than the first taper, with the taper of the proximal and distal segments being continuous and a flattened distal segment distal to the tapered distal segment; and

b) a helical coil having a distal end secured to a distal end of the flattened distal segment.

31. The elongated guidewire of claim 30 in which the taper of the distal segment being greater than the taper of the proximal segment.

32. An intracorporeal device comprising an elongated member having a substantially linear change in stiffness over a length thereof.

33. The device of claim 32 wherein the length of the elongated member has a continuously changing taper angle producing a curvilinear profile that is configured to produce the substantially linear change in stiffness over said length.

34. The device of claim 32 wherein the elongated member has a plurality of tapered segments configured to produce the substantially linear change in stiffness over the length of the member.

35. The device of claim 34 wherein each tapered segment has a substantially constant taper angle.

36. The device of claim 34 wherein the elongate core member comprises at least 3 to about 100 tapered segments.

37. The device of claim 34 wherein the elongate core member comprises about 5 to about 20 tapered segments.

38. The device of claim 32 wherein the elongated core member comprises a material with changing hardness in a longitudinal direction configured such that the change in hardness produces a substantially linear change in stiffness along the length of the core member.

39. The device of claim 32 wherein the elongated member is about 1 to about 50 cm in length.

40. The device of claim 32 wherein the elongated member is about 10 to about 25 cm in length.

41. The device of claim 32 wherein the elongated member tapers distally to a more flexible distal portion.

42. A guidewire comprising an elongate core member with at least one longitudinal section having a substantially linear change in stiffness over a length thereof.

43. The guidewire of claim 42 wherein the longitudinal section of the elongate core member has a continuously changing taper angle yielding a curvilinear profile configured to produce a substantially linear change in stiffness over the length of the longitudinal section.

44. The guidewire of claim 42 wherein the longitudinal section of the elongate core member has a plurality of tapered segments.

45. The guidewire of claim 44 wherein each tapered segment has a substantially constant taper angle with the tapered segments being configured to produce a substantially linear change in stiffness over the length of the section.

46. The guidewire of claim 44 wherein the elongate core member of the longitudinal section comprises about 3 to about 100 tapered segments.

47. The guidewire of claim 44 wherein the elongate core member of the longitudinal section comprises about 5 to about 20 tapered segments.

48. The guidewire of claim 42 wherein the longitudinal section further comprises a material with changing hardness in a longitudinal direction configured such that the change in hardness produces a substantially linear change in stiffness along the length of the section.

49. The guidewire of claim 42 wherein the longitudinal section is about 1 to about 50 cm in length.

50. The guidewire of claim 42 wherein the longitudinal section is about 10 to about 25 cm in length.

51. The guidewire of claim 43 wherein the longitudinal section substantially follows the formula

$$D_L = \left[\frac{64CL}{E\pi} + D_0^4\right]^{\frac{1}{4}}$$

where D_L is the diameter of the elongate core member at length L from a position of starting diameter D_0, E is the modulus of elasticity of the

core member material, and C is a constant that depends on the boundary conditions of the longitudinal section.

52. The guidewire of claim 44 wherein the longitudinal section further comprises transition points between adjacent tapered segments and the diameter of the elongate core member at the transition points substantially follows the formula

$$D_L = \left[\frac{64CL}{E\pi} + D_0^4\right]^{\frac{1}{4}}$$

where D_L is the diameter of the elongate core member at length L from a position of starting diameter D_0, E is the modulus of elasticity of the core member material, and C is a constant that depends on the boundary conditions of the longitudinal section.

53. The guidewire of claim 43 wherein the longitudinal section substantially follows the formula

$$I_L = \frac{CL}{E} + I_0$$

where I_L is the moment of inertia of the longitudinal section at length L from a position of starting inertia I_0, E is the modulus of elasticity of

the longitudinal section, and C is a constant that depends on the boundary conditions of the longitudinal section.

54. The guidewire of claim 44 wherein the longitudinal section further comprises transition points disposed between adjacent tapered segments and the moment of inertia of the longitudinal section at the transition points substantially follows the formula

$$I_L = \frac{CL}{E} + I_0$$

where I_L is the moment of inertia of the longitudinal section at length L from a position of starting inertia I_0, E is the modulus of elasticity of the longitudinal section, and C is a constant that depends on the boundary conditions of the longitudinal section.

55. The guidewire of claim 42 wherein the longitudinal section tapers distally to a more flexible distal portion.

56. The guidewire of claim 42 wherein the longitudinal section tapers proximally to a more flexible proximal portion.

57. The guidewire of claim 42 further comprising a constant taper section of the elongate core member adjacent the longitudinal section.

58. The guidewire of claim 57 wherein the constant taper section is proximally adjacent the longitudinal section.

59. The guidewire of claim 58 further comprising a distal segment having a substantially constant diameter disposed distally adjacent the longitudinal section.

60. A guidewire comprising an elongate core member having at least one longitudinal section with a continuously changing taper angle yielding a curvilinear profile.

61. The guidewire of claim 60 wherein the longitudinal section tapers distally to a reduced transverse dimension.

62. The guidewire of claim 60 wherein the longitudinal section has a length of about 1 to about 100 cm.

63. The guidewire of claim 60 wherein the longitudinal section has a length of about 10 to about 25 cm.